



NJEDge MULTICAST Deploy **Pilot** **Design to be validated**

Michael Scarpellino scarp@pythagoras.td.rutgers.edu

Jim Stankiewicz james.d.stankiewicz@verizon.com

George Laskaris Laskaris@NJEdge.Net

Charles McMickle McMickle@NJEdge.Net

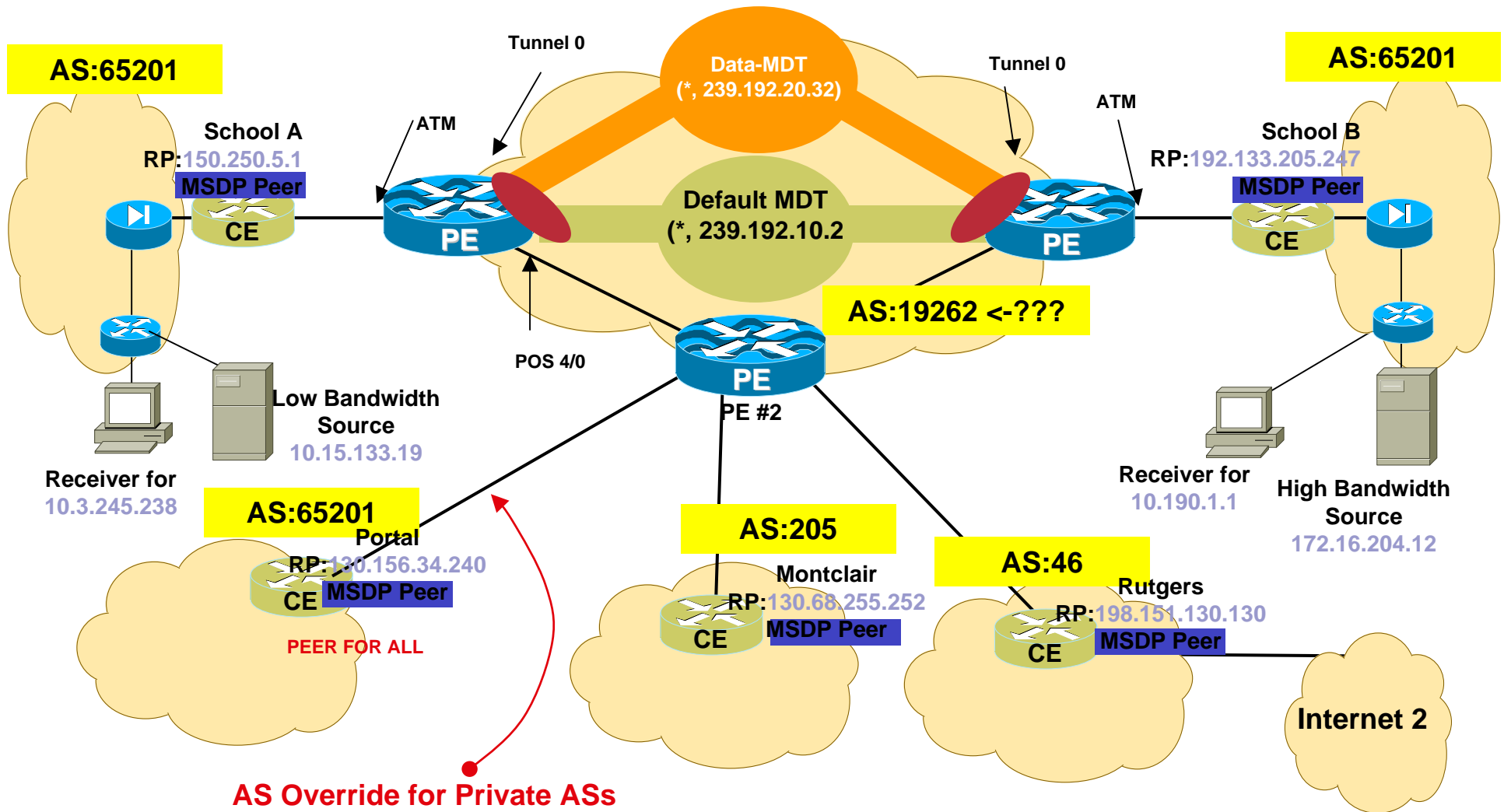
Walter King wking@cisco.com

NJEDge Multicast Team multicast@njedge.net

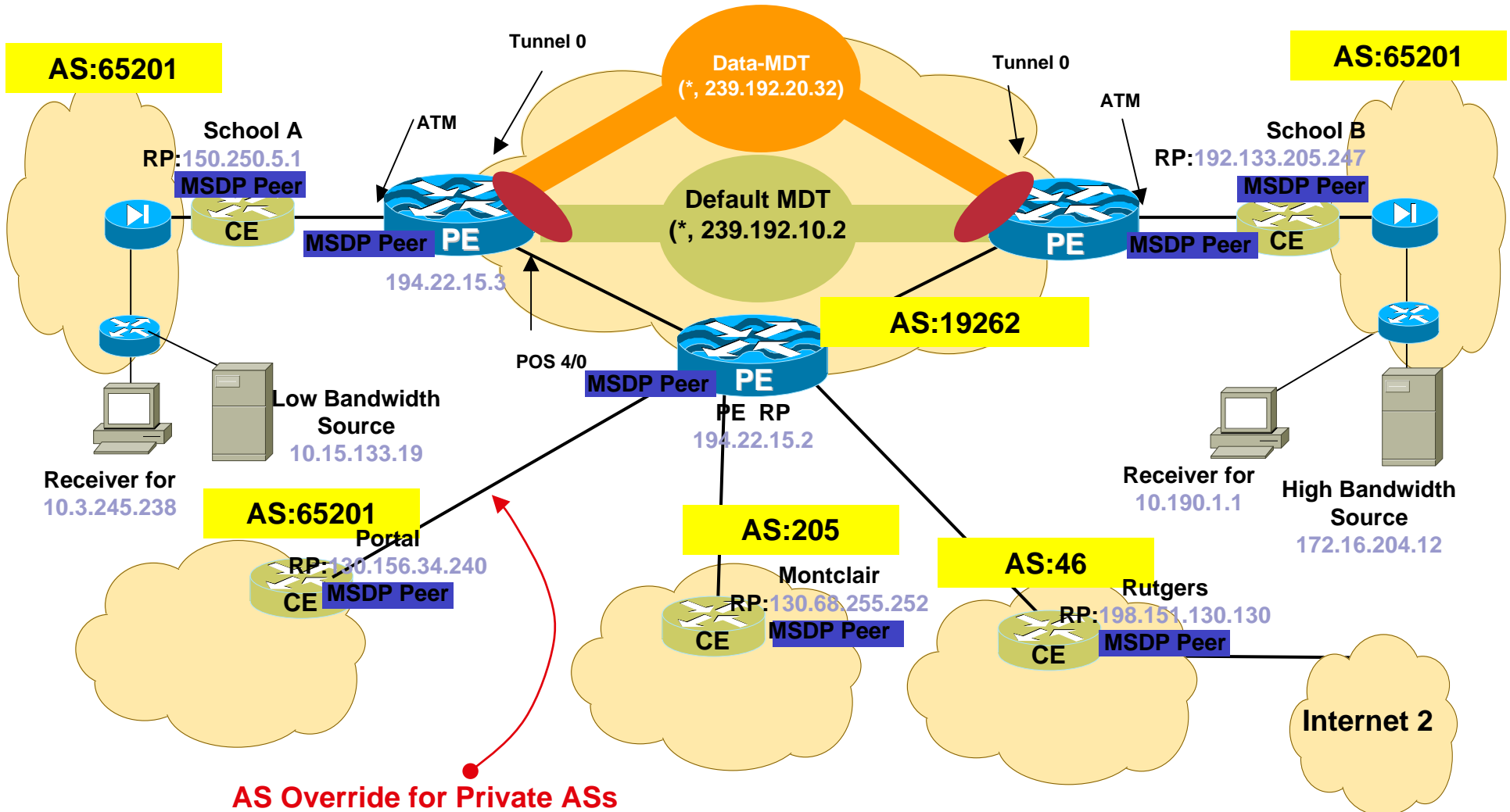
Core and Internet Overview

NJEDge Multicast Over MPLS

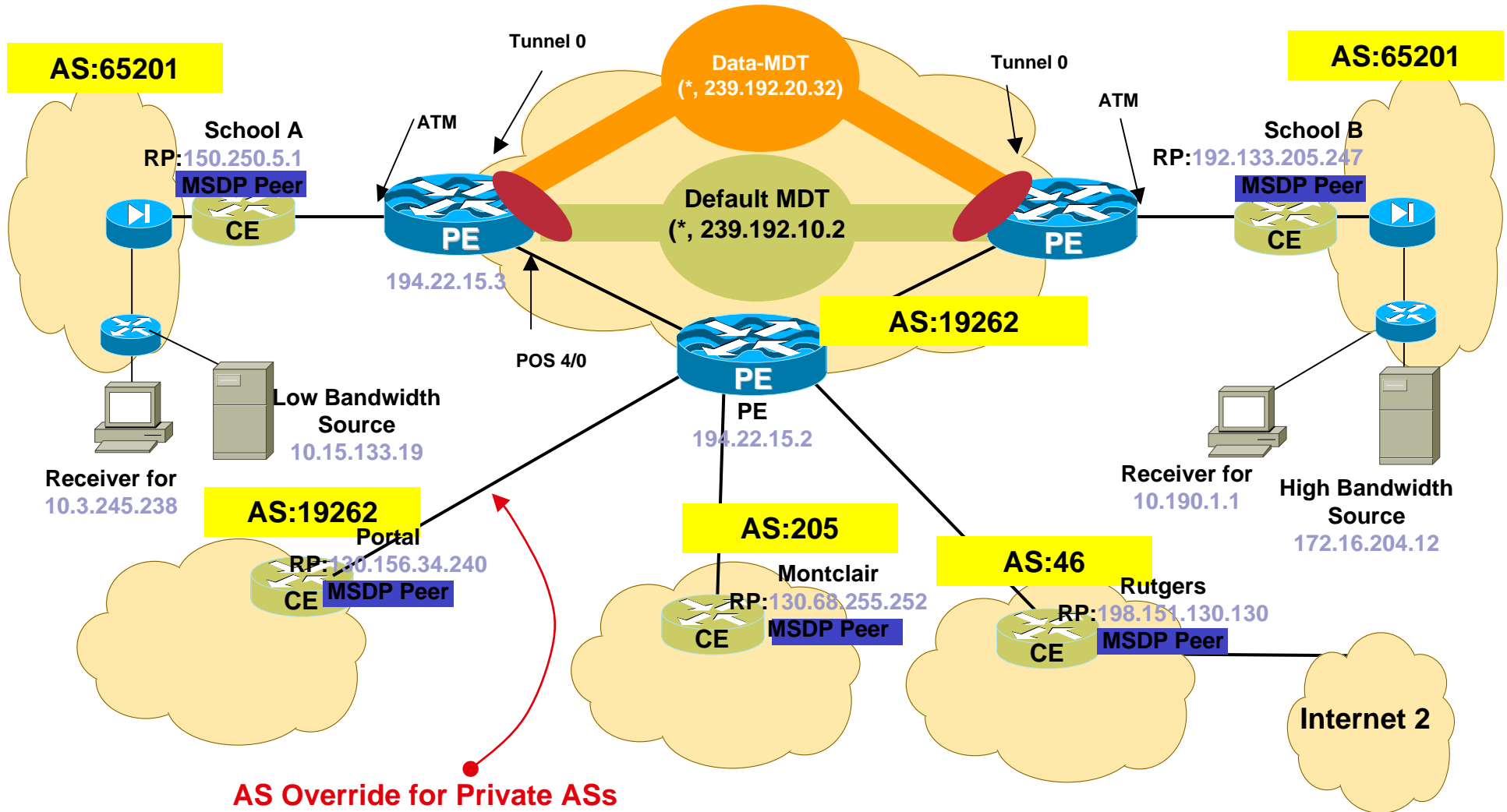
Current Configuration



NJEDge Multicast Over MPLS Needed Configuration Option #1



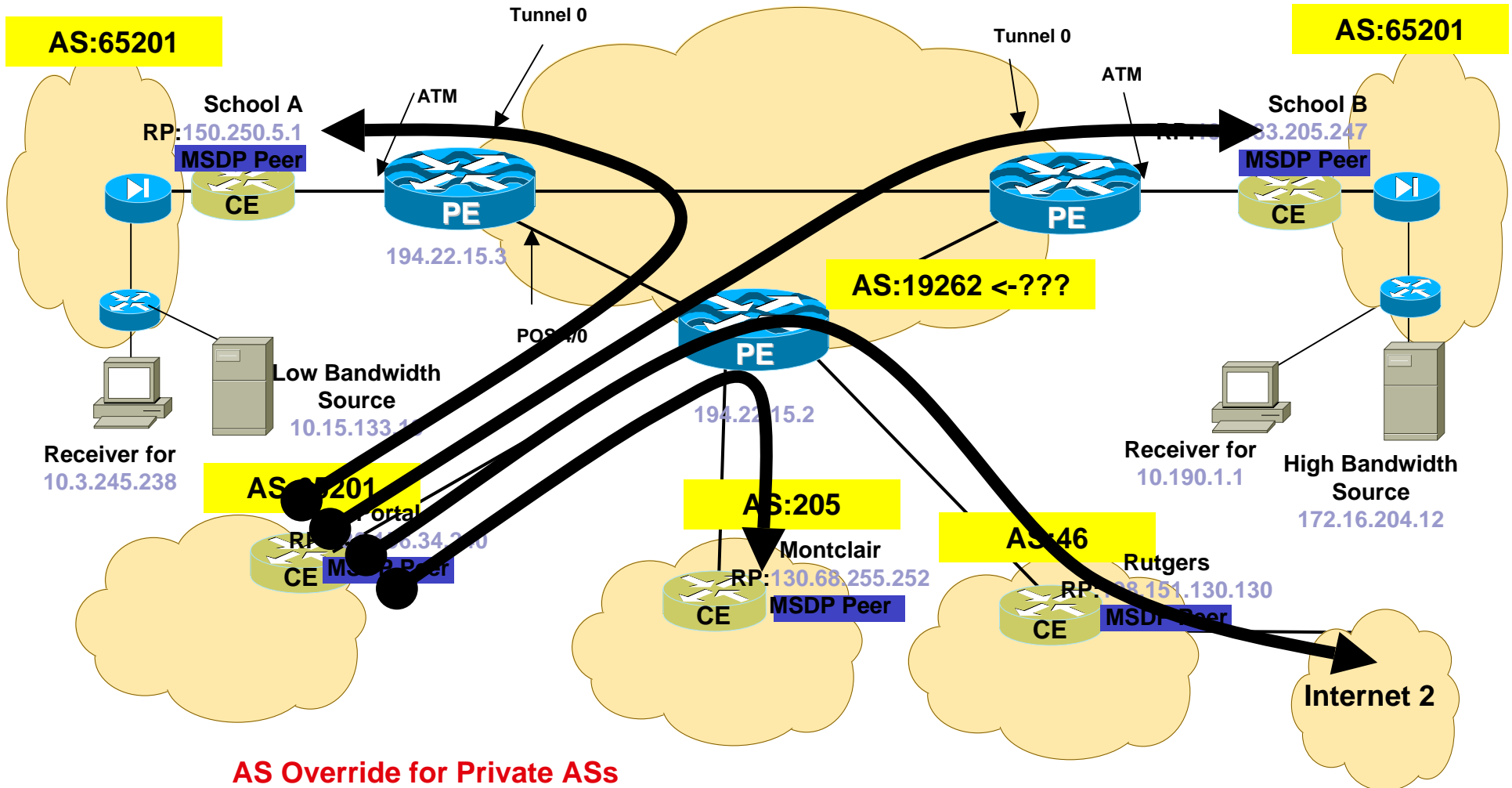
NJEDge Multicast Over MPLS Needed Configuration Option#2



NJEDge Multicast Over MPLS

MSDP SA and BGP Update FLOW from PORTAL

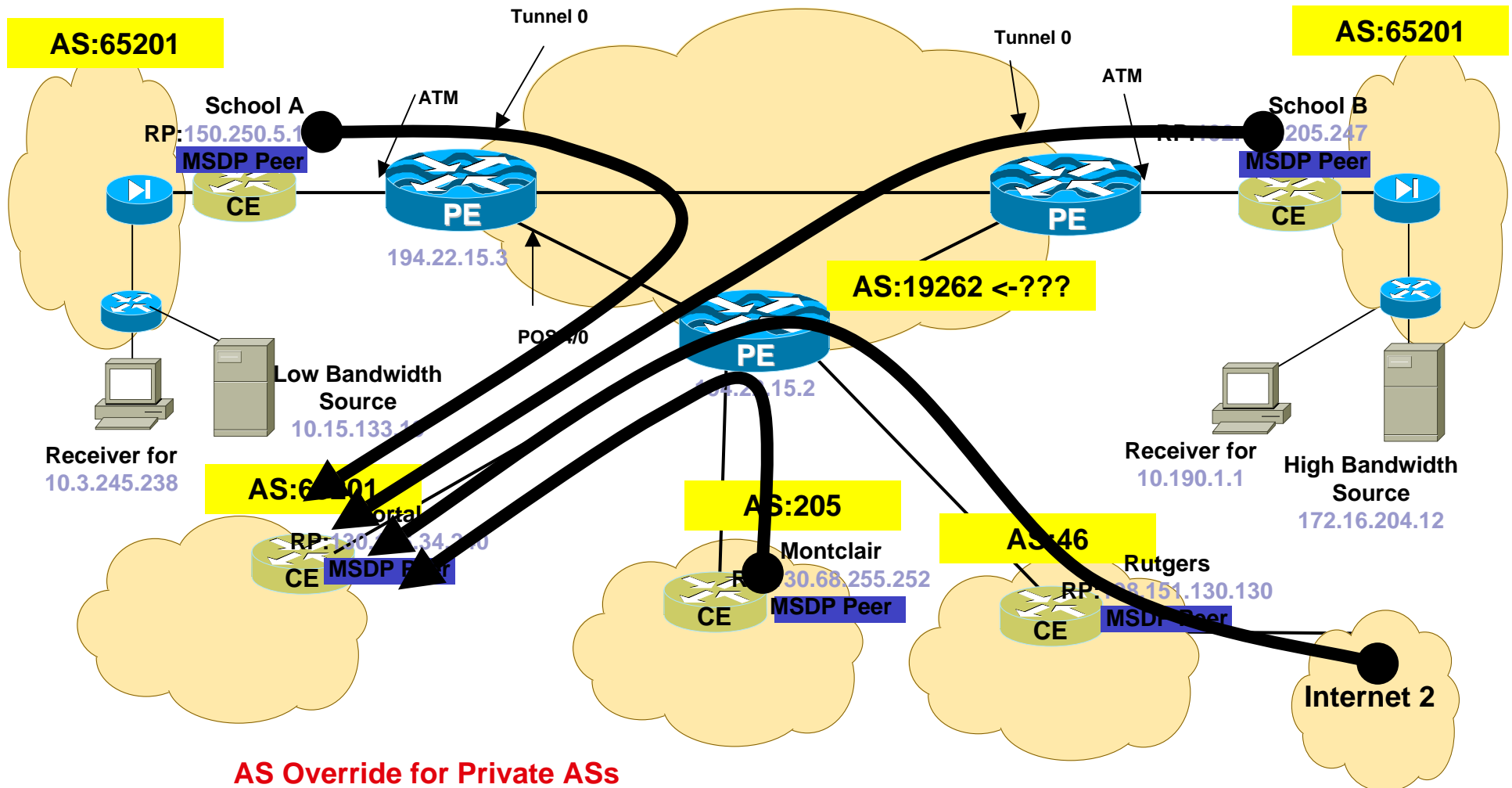
AS Override for Private ASs



AS Override for Private ASs

NJEDge Multicast Over MPLS

MSDP SA and BGP Update FLOW to PORTAL

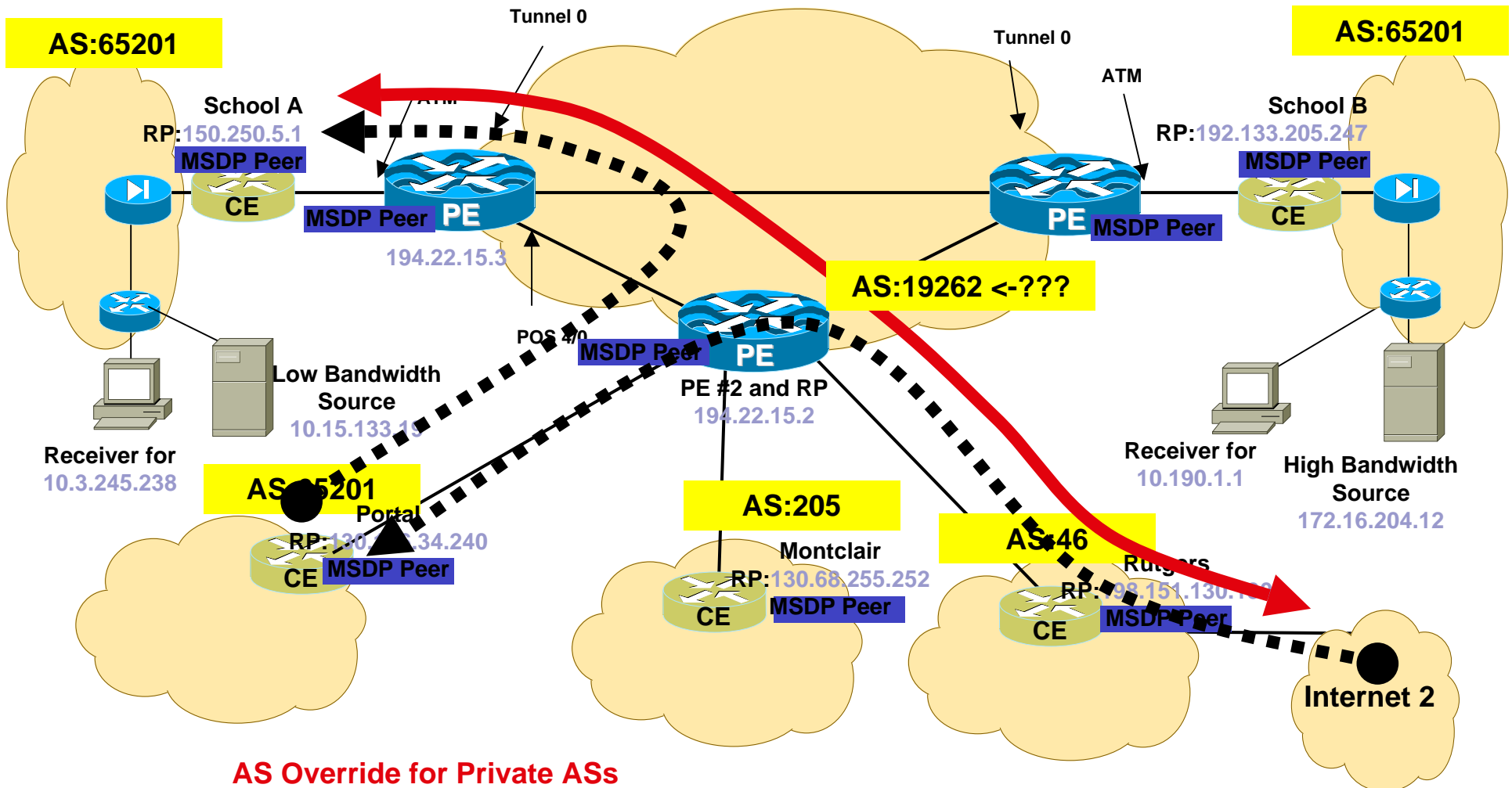


AS Override for Private ASs

NJEDge Multicast Over MPLS

M'CAST SESSION FLOWS Control and Media

(*,G) and (S,G) Join
 (S,G) Media flow

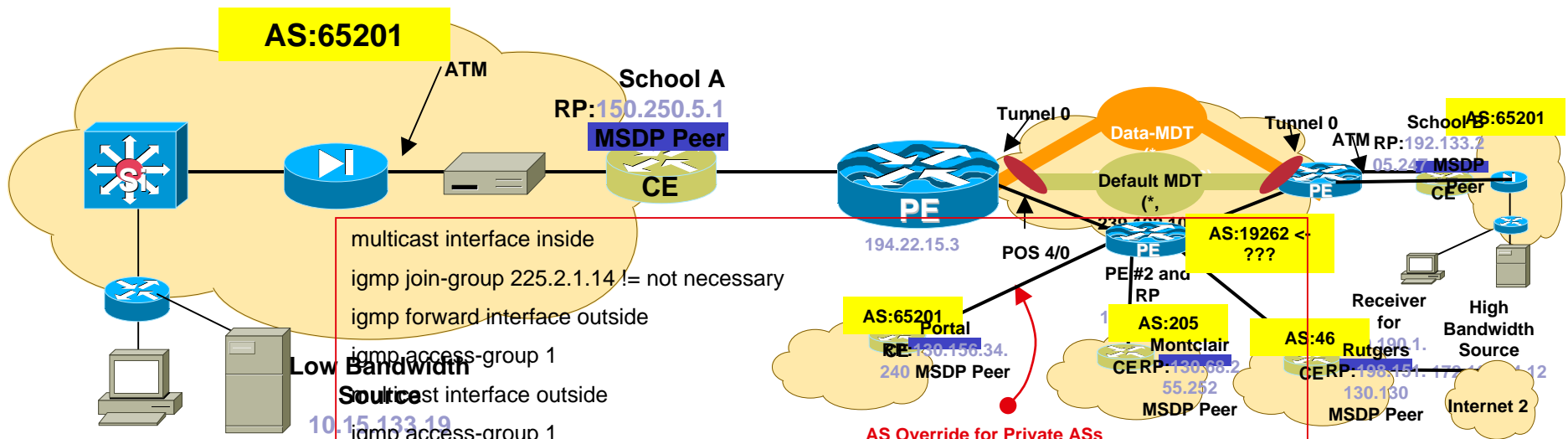


AS Override for Private ASs

Site Overview

NJEDge College Site PIX Options

PIX SMR (Stub Multicast Routing)



```

multicast interface inside
igmp join-group 225.2.1.14 != not necessary
igmp forward interface outside
igmp access-group 1
multicast interface outside
igmp access-group 1
multicast interface dmz
igmp forward interface outside
igmp access-group 1

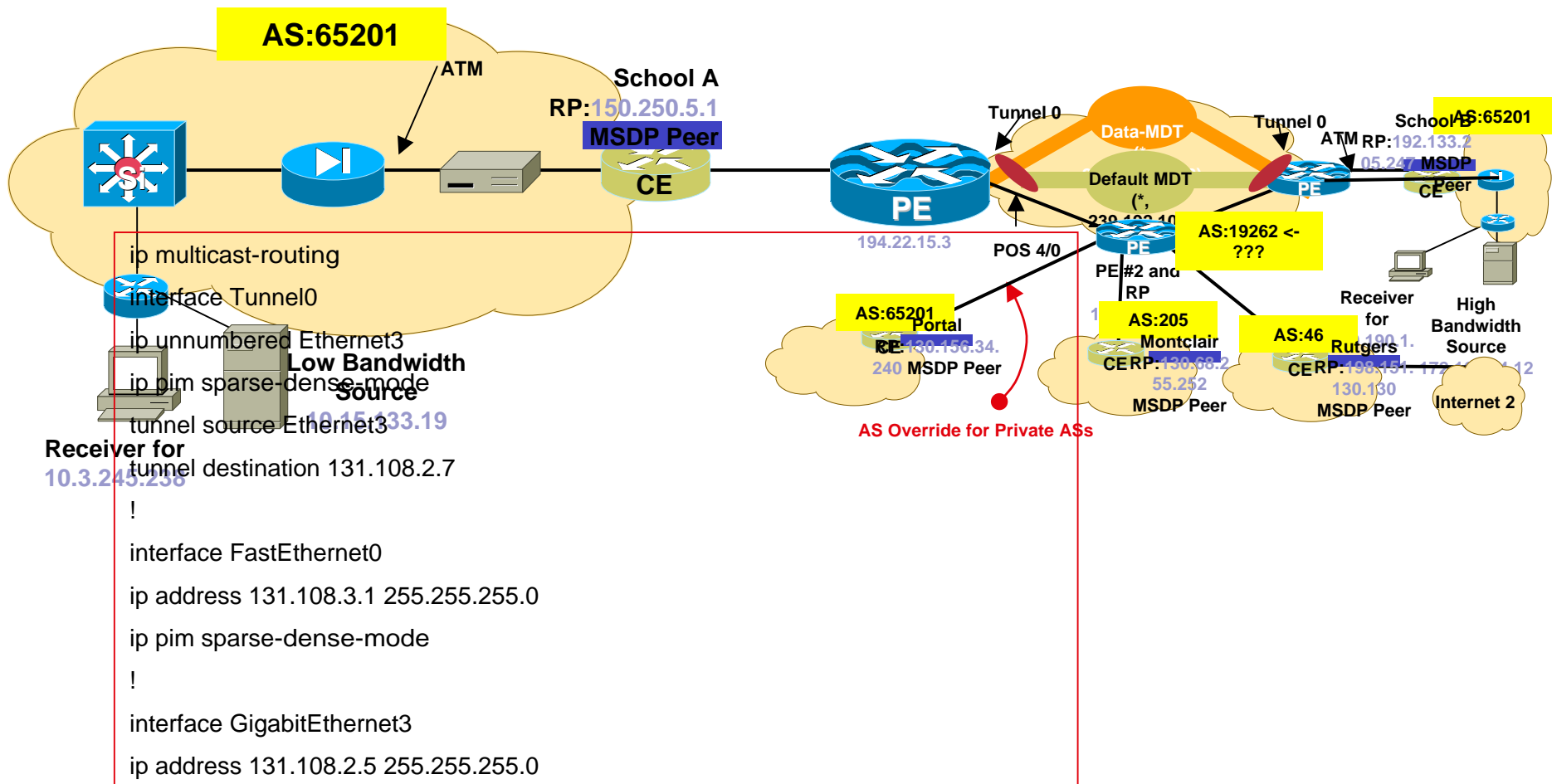
! The following permits igmp messages to 225.2.1.0/25 network
access-list 1 permit igmp any 225.2.1.0 255.255.255.128
access-list 1 deny ip any any

! The following permits multicast packets in the network 225.2.1.0/25 in the
! outside interface of the PIX
access-list 100 permit udp any 225.2.1.0 255.255.255.128
access-list 100 in interface outside

mroute 1.1.1.1 255.255.255.255 inside 230.1.1.2 255.255.255.255 outside
mroute 2.2.2.2 255.255.255.255 dmz 230.1.1.2 255.255.255.255 outside
    
```

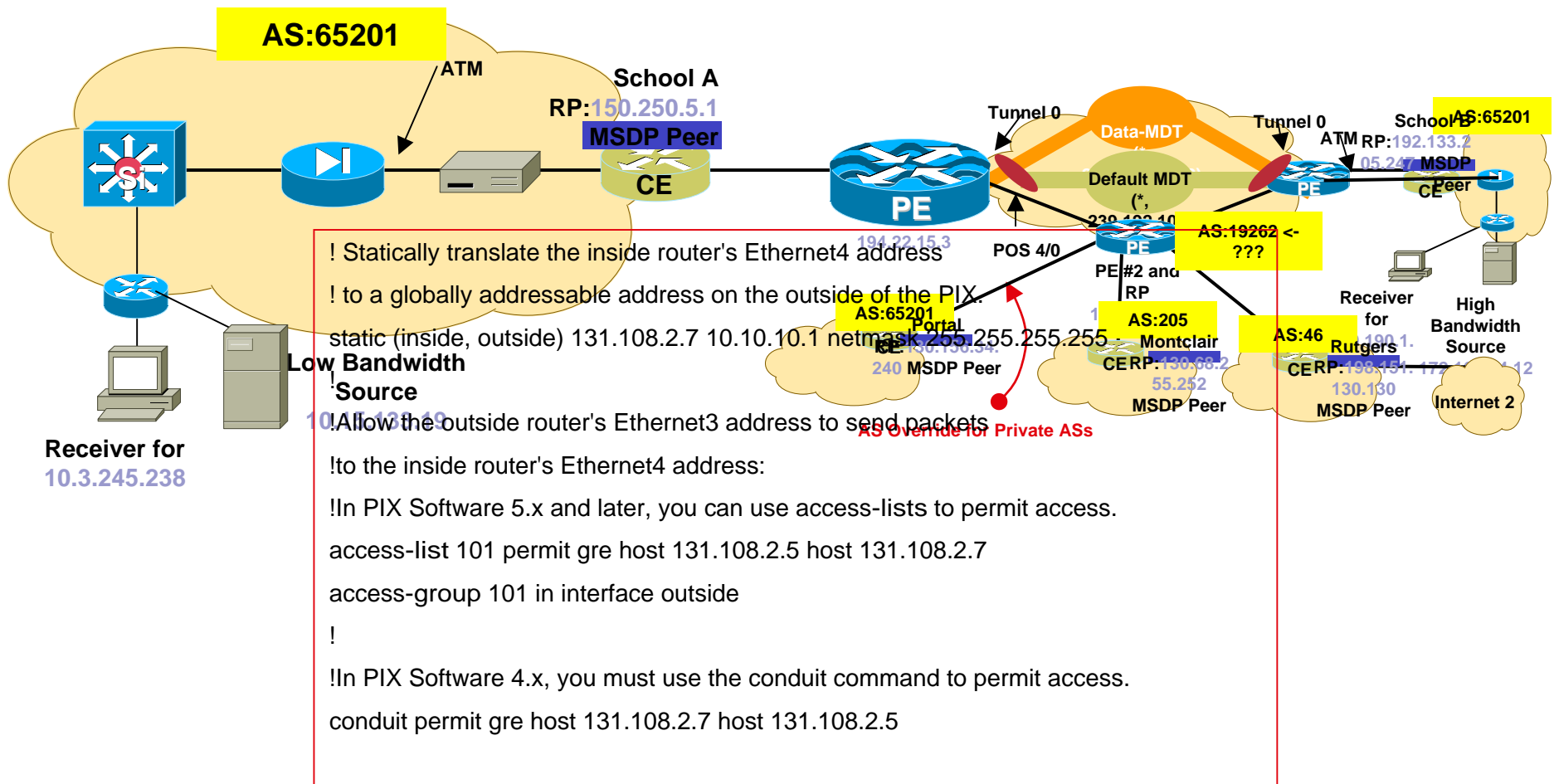
NJEDge College Site PIX Options

PIX with Multicast in GRE Tunnel (InternalRTR)



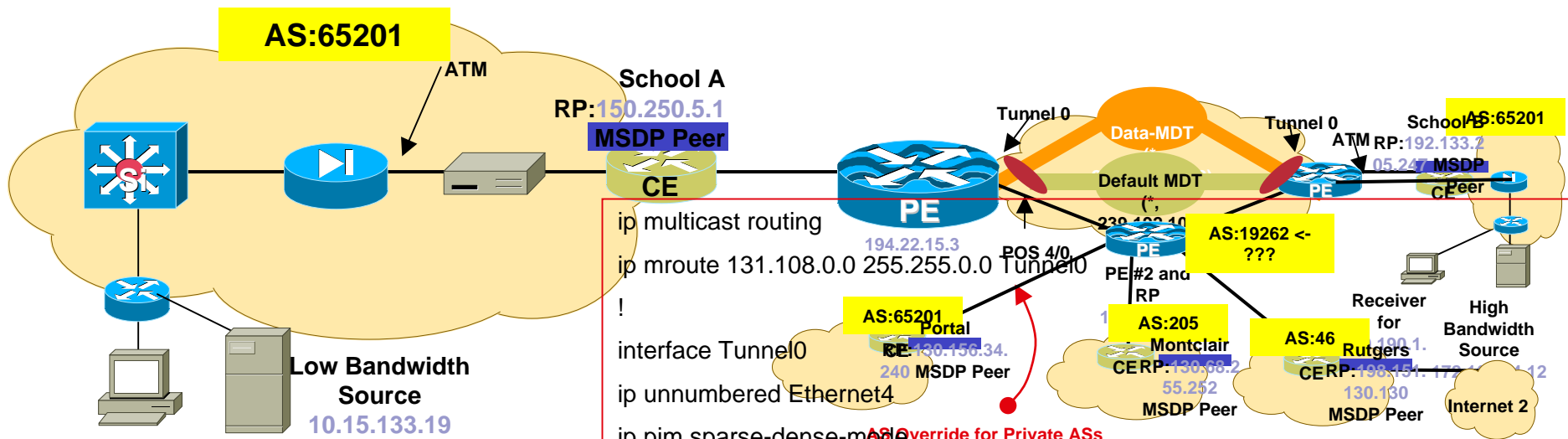
NJEDge College Site PIX Options

PIX with Multicast in GRE Tunnel (PIX)



NJEDge College Site PIX Options

PIX with Multicast in GRE Tunnel (ExternalRTR)



```

ip multicast routing
ip mroute 131.108.0.0 255.255.0.0
!
interface Tunnel0
ip unnumbered Ethernet4
ip pim sparse-dense-mode
tunnel source Ethernet4
!Tunnel destination is the outside !router's (4500's) Ethernet3 interface.
tunnel destination 131.108.2.5
!
interface Ethernet0
ip address 10.10.11.1 255.255.255.0
ip pim sparse-dense-mode
!
interface Ethernet4
ip address 10.10.10.1 255.255.255.0
!
ip route 0.0.0.0 0.0.0.0 10.10.10.2
    
```

CISCO SYSTEMS

